

ICS 25.200

CCS J 36



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30823-2014

**Nickel-alloy probe test method for determination cooling
characteristics of industrial quenching oil**

Issued on: June 24, 2014

Implemented on: December 31, 2014

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

1995 "Nickel alloy probe test method for the determination of industrial quenching oil cooling performance". This standard is equivalent to ISO 9950 using a translation method adopted.

This standard while retaining the original international standard in some of the content of the analog circuit due to no longer meet the current needs of the user in

When you use this standard, you can not get to the bottom part of the analog circuit.

Since ISO 9950.1995 standard has been in force without making amendments to this standard Normative references to international standards still used in the original document.

Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- GB/T 261-2008 for Flash Point by Pensky - Martens closed cup method (ISO 2719.2002, MOD)

--- GB/T 265-1988 Petroleum products - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 2909. 1981, MOD)

--- GB/T 1884-2000 Crude petroleum and liquid petroleum products - Laboratory determination of density (density meter method) (eqv ISO 3675.

1998)

The standard for the presentation of individual symbols and the habitual use of Chinese writing, to comply with the specification is Chinese. For ease of use,

This standard makes the following editorial changes.

--- ISO 9950.1995 in the normative references due date is standard, so this standard in Table 1 to each reference standard

Date reference;

--- Use of the existing legal units of measurement, our country will be repealed unit "ppm" to "10⁻⁶";

--- Figure size and dimension is labeled in accordance with the provisions of Mechanical Drawing 1.

This standard by the National Standardization Technical Committee heat treatment (SAC/TC75) and focal points.

This standard is mainly drafted by. Institute of Electrical and Beijing, Nanjing Branch of China Industrial Co., medium, Houghton (Shanghai) Advanced Industrial

Media Co., Ltd., Beijing Huali Fine Chemical Co., Ltd. Tianjin Institute of heat treatment.

Participated in the drafting of this Standard. China First Automobile Group Corporation Technology Center, Changchun FAW Schwab heat treatment Technology Co., Ltd., Zhejiang

Bicyclic drive Machinery Co., Ltd. Xi'an Follet heat treatment.

Introduction

When hardened steel, hardening is usually the most critical step such hardening process. For hardening, heat treatment workers need different types

If you choose between the oil and water-based emulsion polymer and quenching medium. For each type of media, there are many different products available. due to

Thermal degradation, pollution and bring out other reasons, each quenching medium cooling performance in use are subject to change.

Some methods used to evaluate the quenching medium. Indirect tests, including a certain kind of hardened steel sample can only get there on the cooling performance

Limited information. Direct test most commonly used method is called silver ball method, it is about the center of the silver ball with a thermocouple heated and quenched into a quenching medium to be measured

, The recording function of temperature and time, and usually also the cooling rate and temperature recording silver (or time) of a function.

Mainly due to difficulties silver ball probe and test results of the assessment process, several improved probes already in use, but the basic approach is a

Like. The probe consists of a variety of different sizes and materials made generally

cylindrical shape.

In order to enable comparison between the test results obtained by different laboratories and different quenching medium technical description provided by the vendor,

It is necessary to use standard test methods. Therefore, the International Federation of the heat treatment (IFHT) Materials Science and Technology Committee quenching Technology

We assessed the different existing methods, in order to recommend some way to agree on a standard test arrangements in some countries. This standard is

An outcome of the work of the Committee.

Determination of industrial quenching oil cooling performance nickel alloy probe
experiment method

1 Scope

This standard specifies the use of a nickel alloy probe measuring industrial quenching oil cooling performance laboratory methods. Testing conducted in a static oil can

Under standard conditions with different cooling performance oil for comparison. Test results with varying degrees of agitation quenching equipment industry

The correlation between the quench rate has not been established.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein

Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 2719. 1988 Petroleum products and lubricants using the Pensky-martens closed cup flash point measuring method (Petroleum

products and lubricants-Determination of flash point-Pensky-Martens closed cup method)

ISO 2909. Method (Petroleum products-Calculation 1981 Petroleum products - Calculation of viscosity index from viscosity

of viscosity index from kinematic viscosity)

ISO 3104. 1994 Petroleum products - Transparent and opaque liquids measuring kinematic viscosity and calculation of dynamic viscosity method (Petroleum

products-Transparent and opaque liquids-Determination of kinematic viscosity and calculation of dynamic viscosity)

ISO 3405. 1988 Petroleum products - Determination of distillation range characteristics (Petroleum products-Determination of distillation characteristics)

ISO 3675. 1993 Crude petroleum and liquid petroleum product density or relative density measurement laboratory hydrometer method (Crude petroleum and liquid petroleum products-Laboratory determination of density or relative density-Hydrometer method)

BS1041, Part 4. 1966 thermocouple (Thermocouples)

BS4937, Part 4. 1973 nickel-chromium - nickel aluminum K-type thermocouple (Nickel chromium/nickel-aluminium thermocouples, Type K)

Principle 3

A geometric center equipped with a thermocouple cylindrical nickel alloy specimens (referred probe) was heated in an oven to the set temperature, then placed in a certain volume measured quenching oil. Record Probe core section changes as a function of temperature and time.

After cooling rate is also determined or can be recorded simultaneously. Measurements obtained from the records can be used to evaluate the measured quenching oil.

4.1 Overview

Recommend a solution for the probe calibration (see 5.2) Initial and regular calibration. When the calibration was not in use should be stored in airtight containers